



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,267	08/14/2006	Katsutoshi Sato	294929US8PCT	6043
22850 7590 01/08/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER FISCHER, MARK L				
ART UNIT		PAPER NUMBER		
2627				
NOTIFICATION DATE		DELIVERY MODE		
01/08/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/589,267

Applicant(s)

SATO, KATSUTOSHI

Examiner

Mark Fischer

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/200)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 16, 2009 has been entered.

Claim Objections

2. Claims 7, 11, 13, and 17 are objected to because of the following informalities: **Claim 7, line 5**, it is suggested that "means" be changed to --device-- to be consistent with the device recited in line 2. **Claim 11, line 3**, the phrase "in along" appears to be a grammatical error. **Claim 13, line 29**, the phrase "optical system one of the radial tilt direction" appears to contain a grammatical error. **Claim 17, line 2**, the phrase "wherein the first optical system including ..." does not appear to be grammatically correct. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1, line 1 and lines 32-33 recites the limitation "An optical pick-up device comprising: ... a control circuit connected to the photo-detector for controlling the comatic aberration connecting device in response to the detected reflected light beams." The specification does not disclose that the control circuit is part of the optical pick-up device. However, figure 3 shows a disk drive apparatus which includes a control circuit 73. No new matter should be added.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 18-19 and **Claim 7, lines 26-27** recite the limitation "an object lens drive unit ... serves to allow the bobbin to undergo a drive displacement" which is indefinite because it is unclear if the object lens drive unit is actually actively making the bobbin "to undergo a drive displacement" or if it is passively allowing "a drive displacement" to happen.

Claim 2, line 3 and **Claim 8, line 3** recites the limitation "a region" which is vague and indefinite because there is no physical structural element associated with "a region" in the claim.

Claim 4, line 3 recites “the second light beams having the second and third wavelengths”. There is insufficient antecedent basis for this limitation in the claim because “the second light beams” do not have “third wavelength” (see claim 1, lines 3-6).

Claim 7, lines 2-3 and line 5 recite the limitations “performing rotational operation of an optical disc” and “an optical disc operated by the disc rotational operation means”, respectively. Both of these limitations are vague and indefinite because it is unclear what is meant by “performing rotational operation” and “operated by”.

Claim 1, line 22 and line 23, Claim 7, lines 30-31 and lines 31-32, and Claim 13, line 24 and line 25 each recite the limitation “movement is performed in a circular arc form on an axis ...” which is indefinite because it is not understood how an object can move in an arc form while still remaining on an axis at the same time.

Claim 1, line 22 recites the limitation “movement is performed in a circular arc form on an axis of the radial direction” which is indefinite in light of the limitation “a substantially radial direction of the optical disc” (**lines 20-21**) because a “radial direction of the optical disc” includes every direction that is parallel to the surface of the disc, and thus “a movement” in relation to “the radial direction” is indefinite as to what direction is actually being claimed by “the radial direction” in line 22. **Claim 7, lines 29-31 and Claim 13, lines 22-24** recite similar limitations as claim 1 and are rejected for the same reason.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4, 6-10, 12-14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US Pub. No. 2004/0114495 A1, hereinafter Kim) in view of Hashimoto (US Pub. 20050174504).

Regarding claim 1, Kim discloses an optical pick-up device (Fig. 2) comprising: a first light emitting element (11) for emitting first light beams (11a) having a first wavelength; a second light emitting element (20) for emitting second light beams (21a) having a second wavelength; a third light emitting element (30) for emitting third light beams (31a) having a third wavelength; a first collimator lens (18) that changes one of the first, second, or third light beams emitted from the first, second, or third light emitting element into first rays of parallel light; a second collimator lens (23) that changes one of the first, second, or third light beams emitted from the first, second, or third light emitting element into second rays of parallel light; a first optical system including a first object lens (45), and serving to converge, by the first object lens, the first rays of parallel light and to irradiate the light beams thus converged by the first object lens (45) onto an optical disc (see Fig. 3); a second optical system including a second object lens (41), and serving to converge, by the second object lens, the second rays of parallel light to irradiate the light beams converged by the second object lens (41) onto the optical disc (see Fig. 3); an object lens drive unit (Fig. 3, element 40) including a bobbin (50) that holds the first and second object lenses, and serves to allow the bobbin to undergo a drive displacement in a focusing direction perpendicular to a recording surface of the optical disc, a tracking direction which is a substantially radial direction of the optical disc, and one of a radial tilt direction in

which movement is performed in a circular arc form on the axis of the radial direction and a tangential tilt direction in which movement is performed in a circular arc form on an axis of a tangential direction which is a direction perpendicular to the radial direction (¶ [0130]); and a comatic aberration correcting means for correcting comatic aberration of the second optical system relatively taking place with respect to the first optical system in one of the radial tilt direction and the tangential tilt direction, which is not controlled by the object lens drive unit, (¶¶ [0118], [0119], [0192] and [0193]); a photo-detector for receiving light beams reflected from the optical disc (¶ [0094]).

While Kim discloses aberration correcting means that affects aberration correction in an optical path of the second optical system while not affecting an optical path of the first optical system (i.e. out of an optical path of the first optical system), Kim does not explicitly disclose that the aberration correcting means is arranged in an optical path of the second optical system between the second collimator lens and the second object lens and out of an optical path of the first optical system; and a control circuit connected to the photo-detector for controlling the comatic aberration connecting device in response to the detected reflected light beams.

However, Hashimoto discloses (see Fig. 17) that comatic aberration can be corrected by arranging an aberration correcting means (90) in an optical path of an optical system between a collimator lens (2 or 102) and an object lens (113); a photo-detector (52) for receiving light beams reflected from the optical disc (707, 708); and a control circuit (553) connected to the photo-detector for controlling the comatic aberration connecting device in response to the detected reflected light beams (¶ [0205])

Since Kim discloses aberration correcting means for the light paths of the second optical system (41) and the absence of aberration correcting means for the light path of the first optical system (45), it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the aberration correcting means of Kim with the aberration correcting means of Hashimoto, such that aberration is corrected while the aberration correcting means remains out of an optical path of the first optical system (45) of Kim. The motivation for combination would be to use fewer moving parts in the optical pick-up device.

Regarding claim 2, Hashimoto discloses that the comatic aberration correcting means corrects comatic aberration by changing a refractive index (advancing/delaying phase is changing speed of light through the correcting means (i.e. changing refractive index)) of a region intersecting a path of one of the first, second, or third light beams (¶¶ [0208], [0209]).

Regarding claim 3, Kim discloses that the first wavelength is about 405 nm (¶ [0089]), the second wavelength is about 660 nm (¶ [0092]), and the third wavelength is about 785 nm (¶ [0093]).

Regarding claim 4, Kim discloses that (see Fig. 2) the first light beams having the first wavelength (11a) are incident on the first object lens (45), and the second light beams having the second (21a) and third (31a) wavelengths are incident on the second object lens (41).

Regarding claim 6, Hashimoto discloses that the aberration correcting means includes a liquid crystal correcting device (¶ [0208]).

Regarding claim 7, Kim discloses an optical disc apparatus (Fig. 2) comprising: a disc rotational operation means (19) for performing rotational operation of an optical disc; and an

optical pick-up device (Fig. 2) configured to scan, by light beams, a signal recording surface of an optical disc operated by the disc rotational operation means to perform recording or reproduction of information, the optical pick-up device comprising: see rejection of claim 1.

Claims 8-10 and 12-14 have similar limitations to claims 2, 3, 4, 6, and 1, respectively, and are rejected on the same grounds.

Regarding claim 14, Hashimoto discloses applying a voltage to a liquid crystal correcting device in the optical pick-up device to control a refractive index (advancing/delaying phase is changing speed of light through the correcting means (i.e. changing refractive index)) to correct the comatic aberration (¶¶ [0208], [0209]).

Regarding claim 17, Kim discloses that the first optical system including a device (lip portion protruding and surrounding the lens of element 45) for adjusting the first object lens to the bobbin (by design, the first object lens is inherently fixed to the bobbin in an adjusted state) so that comatic aberration in either one of the radial tilt direction and the tangential tilt direction becomes minimum (becomes minimum (¶¶ [0118], [0119], [0192] and [0193]), where the first object lens, being part of the optical system, inherently plays a role in the comatic aberration becoming minimum).

9. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Hashimoto further in view of Kanaya et al. (US Pub. No. 2006/0077784 A1, hereinafter Kanaya).

Regarding claim 5, Kim discloses that a center of the second object lens and a center of the first object lens are held at the bobbin along the radial direction (see Fig. 6), but does not

disclose that the first and second object lenses are held at the bobbin in the state arranged in the tangential direction. However, Kanaya discloses arranging first and second object lenses in a tangential direction (see Fig. 4B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kim in view of Hashimoto with Kanaya with the motivation to allow the objective lens disposed on the outer side to access a region of a disk at the innermost periphery (¶ [0008]).

Claim 11 has similar limitations to claim 5 and is rejected on the same grounds.

Allowable Subject Matter

10. Claims 15 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Spinali (US Pat. No. 6449106) and Ito et al (US Pub. No. 2004/0240084).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Fischer whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Fischer/
Examiner, Art Unit 2627
12/31/2009
/HOA T NGUYEN/
Supervisory Patent Examiner, Art Unit 2627